



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/203,853	12/02/1998	DAVID WILLIAM WIGGINS	492-1007	4737
23644	7590	12/20/2005	EXAMINER	
BARNES & THORNBURG, LLP			LY, ANH VU H	
P.O. BOX 2786			ART UNIT	
CHICAGO, IL 60690-2786			PAPER NUMBER	
			2667	

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/203,853

Applicant(s)

WIGGINS ET AL.

Examiner

Anh-Vu H. Ly

Art Unit

2667

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 November 2005.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-84 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 1-84 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This communication is in response to applicant's amendment filed November 01, 2005.

Claims 1-84 are pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramakrishnan (US Patent No. 6,167,029) in view of Tang (US Patent No. 6,195,332 B1).

With respect to claims 1, 3-4, 16-18, 30, 32-33, 45-47, 61, 66, 73, and 78, Ramakrishnan discloses receiving frame based data at a first rate and configuring a buffer to receive the frame based data (col. 7, lines 20-22); predetermining a data amount threshold level for the buffer (col. 7, lines 25-27); with respect to the threshold level, monitoring an amount of transmitted frame based data that has been received (col. 7, lines 40-41); in response to step of monitoring the amount of data received, generating a signal (col. 7, lines 41-42); wherein signal is configurable to adapt first rate of transmission from frame based data channel interface to a second rate (col. 7, lines 42-44). Ramakrishnan discloses block diagrams of interconnected points in a network, e.g., frame based to frame based networks (Figs. 2A-2C). Ramakrishnan does not disclose that data being transmitted from a local frame based data channel interface over a synchronous based

Art Unit: 2667

network. Tang discloses a flow control technique for controlling data transmissions in an Ethernet-over-ring communications network (Fig. 4). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Ramakrishnan and Tang and to incorporate the flow control technique of Ramakrishnan in a frame based over SONET network, e.g., Ethernet over SONET, to increase security, reliability, support bandwidth-intensive applications, improve network utilization, and provide QoS options for differentiated services.

With respect to claims 2, 31, 62, and 74, Ramakrishnan discloses that data is received directly from an Ethernet LAN (Fig. 2C).

With respect to claims 5, 19, 34, and 48, Ramakrishnan discloses receiving one or more pause frames generated by a local area network switch (Figs. 7 and 8 discloses flow diagrams for transmitting and receiving pause frames between network entities).

With respect to claims 6, 20, 35, 49, 64, and 76, Ramakrishnan discloses that buffer further comprises data storage locations configurable to store at least one data frame (Fig. 6).

With respect to claims 7, 21, 36, 50, 65, and 77, Ramakrishnan discloses that wherein buffer comprises a size equal to a number of maximum length Ethernet frames, and the number being selectable from the set comprising 4 and 6 (Fig. 6).

Art Unit: 2667

With respect to claims 8, 22, 37, and 51, Ramakrishnan discloses that wherein buffer is configured as FIFO queue (col. 7, line 18).

With respect to claims 9, 23, 38, and 52, Ramakrishnan discloses a buffer unit (Fig. 6). Ramakrishnan does not disclose the buffer is configured as circular buffer. However, circular buffer is well known in the art. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have circular buffer in Ramakrishnan's system, since circular buffer including pointers for pointing to next data object in the buffer and length value that specifies how many objects are currently in the buffer.

With respect to claims 10, 24, 39, 53, 67, 79, and 84, Ramakrishnan discloses determining if amount is less than a threshold value (Fig. 7).

With respect to claims 11, 25, 40, 54, 68, and 80, Ramakrishnan discloses that signal is generated and sent to local interface if amount of frame based data received is not less than the threshold level (Fig. 7 discloses that a pause frame is generated if the buffer level greater than the upper threshold. Herein, the pause frame is received at the interface of the switch before forwarding to the transmitting source).

With respect to claim 12, Ramakrishnan discloses that a decision to generate signal is made substantially immediately (col. 9, lines 17-19).

With respect to claims 13, 28, 41, 42, 55, 59, and 72, Ramakrishnan discloses that the signal is transmitted to the local interface upon another frame, currently being transmitted to the local interface, being completed (col. 9, lines 22-28).

With respect to claims 14, 27, 43, 58, 59, 69, 71, 81, and 83, Ramakrishnan discloses that the pause frame specifying a predetermined time interval for inhibiting further transmissions from local frame based data channel interface (col. 9, lines 64-66).

With respect to claims 15, 29, 44, and 60, Ramakrishnan discloses that the buffer further comprises, above threshold level, an amount of data storage capacity equal to the size of two maximum length Ethernet frames (col. 7, lines 29-33 discloses that the AF level 608 indicates the amount of data stored in the receive buffer 606 is nearing its maximum capacity. The AF level can indicate that the receive buffer is at 95% capacity. Herein, a few more Ethernet frames can be stored above the AF level).

With respect to claims 26, 56, 57, 63, 70, 75, and 82, Ramakrishnan discloses a system and method for generating pause frames in Ethernet networks (Figs. 7 and 8). Ramakrishnan does not disclose that pause frames are incorporated in one or more virtual containers. Tang discloses a flow control technique in an Ethernet-over-ring communications network (Fig. 4). Herein, synchronous channels are used to carry data and flow control information. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Ramakrishnan and Tang and to incorporate the flow control technique

Art Unit: 2667

of Ramakrishnan in a frame based over SONET network, e.g., Ethernet over SONET, to increase security, reliability, support bandwidth-intensive applications, improve network utilization, and provide QoS options for differentiated services.

Response to Arguments

3. Applicant's arguments filed November 01, 2005 have been fully considered but they are not persuasive.

Applicant argues in pages 3 and 4 that there is no motivation or suggestion to incorporate the flow control technique of Ramakrishnan in the Ethernet over ring communications network of Tang.

Examiner respectfully disagrees. Ramakrishnan discloses a data flow control technique for controlling data transmissions in an Ethernet network, e.g., 1 Gbps Ethernet networks, by detecting and generating pause frames when the buffer capacity is almost full. Tang discloses a rate-based flow control protocol on an Ethernet over ring communications network. Herein, data transmissions are Ethernet frame based packets. Therefore, it is reasonable to combine the teachings of Ramakrishnan and Tang to derive the claimed invention since flow control techniques, as taught by Ramakrishnan and Tang, applied to Ethernet packets.

Further, it is reasonable to incorporate the flow control technique of Ramakrishnan in the Ethernet over ring communications network of Tang since a flow control technique is used to control data transmissions between different network nodes and it does not depend on what network the nodes are resided within. Therefore, the functions such as monitoring buffer capacity and transmitting control packets between entities are not part of any particular network

Art Unit: 2667

protocol, e.g., Ethernet, SONET/SDH, IP, Frame Relay, etc... Herein, the functions can be implemented in any network for controlling data transmissions.

Applicant further argues in pages 4-8 that Tang discloses a centralized transmission control protocol while Ramakrishna discloses a distributed flow control therefore one skilled in the art would not be motivated to incorporate the flow control technique of Ramakrishnan in the Ethernet over ring communications network.

Examiner respectfully disagrees. First of all, it does not matter whether a centralized or a distributed flow control as taught by Tang or Ramakrishnan. The point herein is that the flow control of Tang can be used in an Ethernet over ring network, therefore, another flow control, as taught by Ramakrishnan, can also be used in an Ethernet over ring network since both flow controls are related to and controlled Ethernet data transmissions.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2667


however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anh-Vu H. Ly whose telephone number is 571-272-3175. The examiner can normally be reached on Monday-Friday 7:00am - 4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

avl


CHI PHAM
SUPERVISORY PATENT EXAMINER
ELECTRONIC BUSINESS CENTER
12/16/05